

ALTERNATIVES FOR CELLULAR CONNECTIONS

PURPOSE

This study's purpose is to evaluate alternatives for Mobile Telephone Switching Office (MTSO) connections to local exchange company tandem for the interchange of mobile-to-landline and landline-to-mobile traffic. The study concentrates on the Standard Metropolitan Statistical Areas (MSAs) in Kansas, Missouri, Oklahoma and Texas.

DISCUSSION

My general approach was to first examine state maps showing the Southwestern Bell Mobile Systems (SBMS) cellular geographic service areas for the MSAs in these states. Next I identified the Southwestern Bell Telephone Co. (Southwestern Bell) and the non-Bell exchange company (NBEC) tandems in these MSAs. I obtained copies of tariffs, and contracts, for the connection of cellular services to local exchange access. I calculated (1) the rates to connect the MTSO to the local exchange company tandem and (2) the rates to terminate mobile-to-landline calls on the local exchange network. I also examined the local calling scopes for the tandems.

The study is concerned with tandem alternatives, including connections for originating (landline-to-mobile) traffic and Type 2A terminating (mobile-to-landline) usage.¹ Only Pioneer Telephone Cooperative of Kingfisher, Oklahoma, and Southwestern Bell provide such connections under tariff. The remaining NBECs connect with cellular companies on a contract basis. Generally, a contract lists the rates for terminating usage, then references the company's access service tariff for dedicated connections.²

There are technical and economically feasible alternatives available in most MSAs. Contractual interconnections give the NBECs significant advantages over Southwestern Bell. For example, the NBEC can be more responsive to its customers. It can avoid tariffs and the lengthy hearing process required to change tariffs. The NBEC can negotiate rates with its customers. This gives the NBEC the ability to bargain for the increased network usage by lowering rates.³ Most economists agree that the relevant costs for pricing are marginal costs (sometimes called incremental costs). If the NBEC sets rates above its marginal costs, the NBEC will make money.

My Exhibit A lists certain Southwestern Bell tandems for each MSA and some of the NBEC options. An asterisk indicates those NBECs that have the same, or equivalent, local calling scope as the Southwestern Bell tandem. The list is not all-inclusive as other NBEC tandems exist in most of the MSAs. My Exhibit B shows the

rates for Southwestern Bell tandem connections and for NEBC tandem connections in each MSA.

BROWNSVILLE MSA

The Brownsville MSA includes three large exchanges: Brownsville, Harlingen and McAllen. The alternative tandem connection for this MSA is the Valley Telephone Co. switch in Raymondville, Texas.¹ The Valley Telephone Co. does not have cellular providers connecting to its tandem. However, it is willing to provide such connections on a contract basis; and, expects to do so when Southwestern Bell implements the area wide calling plan in the Rio Grande Valley.¹ Valley Telephone Company's offices are digital and connected with fiber optic cable.¹ Accordingly, it is prepared for area wide calling.

CORPUS CHRISTI MSA

GTE's terminating usage rates are similar to Southwestern Bell's rates within the local calling scope. The GTE tandem in Port Lavaca, Texas is not presently in the Corpus Christi local calling area. However, in the near future, Southwestern Bell and the NEBCs will be filing a LATA-wide extended local calling plan with the Texas Public Utility Commission.¹ This plan will include the entire Rio Grande Valley.

Outside the local calling scope, GTE prefers to charge its tariffed long distance (toll) rates. Nonetheless, GTE will provide such connections at tariffed feature group A (FGA) switched access rates for the entire LATA.¹ The LATA-wide FGA rates are much cheaper than toll. GTE's FGA rates include \$.0709 per minute for carrier common line and Texas interexchange carrier charges. Neither of these rates are supported by costs; rather they are both pure subsidies to residential local exchange service. Even the remaining \$.0179156 per minute rate exceeds GTE's cost.

Since GTE's terminating usage rates are under contract, they are negotiable. Volume discounts would benefit both the cellular company and GTE.

DALLAS - FT. WORTH MSA

To obtain the local calling scope of both Dallas and Ft. Worth a cellular company may connect to the Southwestern Bell tandems in both Dallas and Ft. Worth. The cellular carrier then hauls the traffic between those metropolitan areas on its own facilities or leases facilities from an interexchange carrier. Alternatively the cellular company may connect to the GTE of the Southwest tandem in Irving. The Irving tandem has access to both the Dallas and the Ft. Worth local calling areas.¹

GTE's terminating usage rates are similar to Southwestern Bell's rates within the local calling scope.¹ Outside the local calling scope, GTE wants to charge its tariffed long distance (toll) rates. GTE will also provide such connections at tariffed FGA switched access rates for the entire LATA. The LATA-wide FGA rates are much cheaper than toll. Even so, GTE could lower the FGA rates in establishing volume discounts (such as for a cellular carrier), yet retain a profit.

Since GTE's terminating usage rates are under contract, they are negotiable. As long as GTE's rates exceed its costs, GTE has the incentive to lower those rates to attract more network usage. Volume discounts would benefit both the cellular company and GTE.

HOUSTON MSA¹²

As discussed above, GTE connects under contract for terminating usage within the local calling scope and using switched access LATA-wide FGA under tariff. Its rates for termination in the local calling scope are comparable to those of Southwestern Bell. GTE's Baytown and Dickinson tandems have the entire Houston metropolitan area as a part of their local calling scope.¹³ Thus, GTE supplies two alternatives in the Houston MSA.

Sugar Land Telephone Co. also has a tandem in Sugar Land which is in the Houston metropolitan calling scope.¹⁴ Although Sugar Land is not presently interchanging cellular traffic, it is willing to develop contract rates for this service.¹⁵

Ft. Bend Telephone Co. owns a tandem in Katy, Texas, within the Houston metropolitan calling scope.¹⁶ Ft. Bend is not interchanging traffic with a cellular company, but, it may do so under contract or under its access service tariff.¹⁷

KANSAS CITY MSA

The Kansas City metropolitan calling scope encompasses parts of both Missouri and Kansas.¹⁸ The United Telephone Company of Missouri's Harrisonville exchange is within the combined Kansas City, Kansas/Missouri metropolitan calling area.¹⁹ Formerly a tandem, United downgraded the Harrisonville office to class five. Harrisonville now homes on United's Warrensburg tandem.²⁰ Although Warrensburg is not in the local calling scope for the Kansas City metropolitan area, a cellular carrier could connect to the Warrensburg tandem and benefit just the same. The connector could designate the Harrisonville office for determining its local calling scope, and as its rate center.²¹ This alternative is just as cost effective as if the tandem itself were in the local calling scope.

OKLAHOMA CITY MSA

In the Oklahoma City MSA the alternatives exist, but the NESC's current rates are higher than Southwestern Bell's rates. The Pioneer Telephone Cooperative provides cellular interconnection under its Tariff O.C.C. No. 1. Pioneer patterned this tariff after the original access tariffs the Oklahoma Rural Telephone Coalition (ORTC) filed in the mid-1980s. The rates and structure are the same as for access services under the ORTC's Interstate Access Service Tariff. The ORTC did not set rates based upon economic costs. Except for the carrier common line rate, access rates were filed equal to the then effective interstate access rates. The carrier common line rate was a make-whole rate for a revenue neutral filing. Only the carrier common line rate appears to have changed since 1987.

Because the Oklahoma City metropolitan calling area is very large (encompassing over 40 exchanges), the Pioneer Telephone Cooperative is in a unique position to capture more cellular usage. The metropolitan calling area includes Pioneer's Calumet, Crescent, Kingfisher and Okarche exchanges. Pioneer could increase network usage by lowering its cellular connection rates. The current rates are significantly above the marginal costs of switched access. This is a significant incentive for Pioneer. Pioneer, if it chose to lower its rates for cellular connections, could profit from the added business as long as its rates exceed costs.

ST. LOUIS MSA

A St. Louis MSA alternative is GTE's Wentzville, Missouri tandem, formerly owned by Conitel of Missouri, Inc. GTE's current terminating usage rates greatly exceed costs. GTE's costs should be less than \$.03 per minute; but it charges more than \$.05 per minute.¹⁰ Accordingly, GTE has the ability to significantly lower its rates and still make a profit. It is likely that GTE would, if approached by a cellular carrier, significantly lower its rates for cellular connections.

SAN ANTONIO MSA

The alternative tandem connection for the San Antonio MSA is the Guadalupe Valley Telephone Cooperative switch in Bulverde, Texas. Guadalupe Valley Telephone Cooperative does not have cellular providers connecting to its tandem. It is technically capable of providing such connections if ordered by a cellular carrier, such as McCaw. This could be done under contract. Bulverde is in the San Antonio local calling scope.¹¹

TOPEKA MSA

The closest NBEC tandem to Topeka is the United Telephone Company of Kansas tandem in Holton, Kansas.¹² The United exchanges of Meriden and Perry are less than 15 miles from Topeka. A cellular company could designate one of these exchanges as the "end office" to determine the tandem interconnection service's local calling scope and rate center.¹³

United's contract rates are currently higher than Southwestern Bell's rates. United could increase its revenues by lowering its cellular connection rates, if approached by a cellular provider such as McCaw, to interchange traffic with its tandems. United's current rates are significantly above the marginal costs of switched access. Like GTE, United has the negotiating room to significantly lower its rates and still make a profit.

The Southwestern Bell rates for terminating access are among the lowest in the Southwest. In January 1994 Southwestern Bell will reduce the PGA LATA-wide access rate to \$0.0163¹⁴. By January 1995 the total PGA LATA-wide access rate for cellular terminating usage will only be \$0.0102¹⁵ for a 25 mile call.¹⁶ First assume these rates exceed costs, and second, they approximate the switched access costs in Kansas, Missouri, Oklahoma and Texas for Southwestern Bell and for the NBECs. If true, then it follows that the terminating usage rates are very profitable; accordingly, the NBECs have much negotiating room for their contract rates.

CONCLUSION

Most MSAs in Kansas, Missouri, Oklahoma and Texas have more than one option for originating and terminating cellular usage on the local exchange network.¹⁷ NBECs typically provide these interconnections under contract. This gives them the flexibility to negotiate the best deal with the cellular providers. Since the present rates are significantly above cost, the NBECs have room to negotiate.

There are other advantages for using NBEC tandems for interchanging traffic. For example, in Irving, Texas the local calling scopes for both the Dallas and the Ft. Worth metropolitan exchanges are available by connecting to the GTE tandem and subscribing to Ft. Worth Extended Metropolitan Service.

As LATA wide calling plans are implemented in Texas, then all Texas MSAs will have technical and economically viable options for interchanging traffic. Where a cellular provider owns network facilities, then that provider may furnish its own transport between the MTSO and a tandem at its marginal cost.

NOTES

- ' A cellular provider can also order connections between the cellular company's MTSO and its radio-transmitters from the access service carriers; however, the cellular company usually furnishes these connections itself. Consequently, I did not include radio-transmitter links in my inquiry.
- ' Cellular providers use dedicated connections for originating traffic.
- ' The Raymondville Exchange is owned by GTE of the Southwest, Inc. The exchanges surrounding Raymondville are owned by Valley Telephone Co. which is headquartered in Raymondville. Valley Telephone Co. also has a tandem in Raymondville.
- ' Per December 8, 1993 telephone conversation with representatives of the Valley Telephone Company, a plan will be submitted to provide extended local area calling to the Rio Grande Valley. See infra note 6. Valley Telephone Co. has all digital switches connected with fiber optic cable. It is willing to provide cellular connections under contract.
- ' Id.
- ' Per telephone conversation on December 1, 1993 with a management representative, Southwestern Bell plans to file an area-wide extended local calling plan for the Rio Grande Valley in the not too distant future.
- ' Feature group A (FGA) switched access service is a line side connection to the central office switch for transmission within the voice frequency bandwidth. FGA is provided with a telephone number and appears to be like any other local exchange business or residence telephone number; however, for FGA, the entire LATA is available to terminate calls to the public switched network at a per minute rate.
- ' The GTE Southwest exchange of Irving is a part of the local calling scope of the Dallas Metropolitan Exchange. Irving customers may also subscribe to Ft. Worth Extended Metropolitan Service. See Southwestern Bell Texas Local Exchange Tariff at paragraphs 5.3 and 5.4. The Dallas and Ft. Worth tandems also have access to both local calling scopes via optional Extended Metropolitan Service, but cellular companies have typically chosen to terminate in them separately.
- ' Moreover, GTE will provide terminating usage at the lower (within the local calling scope) contracted rate for any subscriber office of one of its tandems. For example, GTE rates terminating usage to all of the class five offices homing on the Sherman tandem at the local calling scope rate. This rating applies regardless of whether that end office is in the Sherman

extended calling area. Avoiding the higher toll and switched access charges is a distinct advantage.

¹² Even though SEMS does not provide cellular service in Houston, I was asked to study the existence of alternative access arrangements in this market due to the size of the market.

¹³ See Southwestern Bell Texas Local Exchange Tariff at paragraph 5.5 which provides the local calling area of the Houston Metropolitan Exchange. Sugar Land is in the local calling area of the Houston Metropolitan Exchange. Baytown, Katy and Dickinson may be included in the local calling area by subscribing to Extended Metropolitan Service.

¹⁴ See Southwestern Bell Texas Local Exchange Tariff at paragraph 5.5 which provides the local calling area of the Houston Metropolitan Exchange.

¹⁵ Per letter dated December 7, 1993, [correct date should be December 9, 1993] from Alltel Service Corporation, it will develop contract rates for dedicated connecting circuits and for terminating usage for the Sugar Land tandem.

¹⁶ See Southwestern Bell Texas Local Exchange Tariff at paragraph 5.5 which provides the local calling area of the Houston Metropolitan Exchange. Katy customers may be included in the local calling scope of the Houston Metropolitan Exchange by subscribing to Extended Metropolitan Service.

¹⁷ Per telephone conversations with representatives of Ft. Bend Telephone Co. on December 8, 1993. Ft. Bend Telephone Co. concurs in the Texas Statewide Telephone Cooperative, Inc. tariffs.

¹⁸ See Southwestern Bell Local Exchange Tariff at paragraph 1.8.3 A.2. which lists the exchanges in the Kansas City local calling scope.

¹⁹ See Southwestern Bell Local Exchange Tariff at paragraph 1.8.3 A.2.

²⁰ Per telephone conversation on December 10, 1993, with Product Manager for United Telephone Company, Inc.

²¹ See Southwestern Bell's Missouri Cellular Mobile Telephone Interconnection Tariff at paragraph 4.2 3 which states "[t]andem (Type 2A) interconnections require the carrier to designate an end office to determine the tandem interconnection service's local calling scope and rate center." See also Pioneer Telephone Cooperative's Oklahoma Tariff O.C.C. No. 1 which contains similar wording.

²² Consider GTE's switched access rates: \$.0852720 per minute is for carrier common line access. Since the carrier common line rate element is a pure subsidy to residential local exchange

service, this leaves only \$0.029582 per minute (\$114864-.065272=\$0.029582). Of the \$0.029582, I have included switched transport rates for a distance of 25 miles (the rate per mile per minute is \$.0004). The \$0.029582 rate presumably makes a return above cost. GTE has room to lower its terminating usage rates below the current \$.05071 per minute and still profit.

¹¹ See Southwestern Bell Local Exchange Tariff at paragraph 5.6 which gives the details of the San Antonio Metropolitan Exchange calling scope. Guijarro customers may subscribe to Extended Macropolitan Service for San Antonio local calling.

¹² Per December 10, 1993 telephone conversation with Product Manager for United Telephone Company, the Holton tandem has been, or soon will be, downgraded to a class 4 office. Its tributaries will be re-homed on United's Hiawatha tandem.

¹³ See Southwestern Bell's Kansas Radio Common Carrier Interconnection Tariff at paragraph 1.4.5 which states "[c] tandem (Type 2A) interconnections require the carrier to designate an end office to determine the tandem interconnection service's local calling scope and rate center." Under contract United Telephone Company of Kansas could allow a similar approach.

¹⁴ The carrier common line rate becomes \$.0061 on January 1, 1994; and goes to zero on January 1, 1995 per Southwestern Bell's Kansas Access Service Tariff at §3.8.

¹⁵ *Id.*

¹⁶ The MSAs without MOC having current alternatives are noted on Exhibit A as "no options."

EXHIBIT A

TANDEM SERVING OPTIONS

TANDEM SERVING OPTIONS

MSA	SWBT Tandem	Non-SWBT Tandem
Abilene	Abilene	No options
Amarillo	Amarillo	No options
Brownsville	Harlingen	Raymondville (Valley Tel Co)
Corpus Christi	Corpus Christi	Port Lavaca (GTE)
Dallas	Dallas	*Irving (GTE)
Ft Worth	Ft Worth	*Irving (GTE)
Houston	Houston	*Baytown (GTE) *Dickinson (GTE) *Katy (Ft Bend Tel Co) *Sugar Land (Sugar Land Tel Co)
Kansas City	Kansas City, MO Kansas City, KS	Warrensburg (United)
Lubbock	Lubbock	No options
Midland/Odessa	Midland	No options
Oklahoma City	Oklahoma City	*Kingfisher (Pioneer)
San Antonio	San Antonio	*Bulverde (Guadalupe Valley Tel Coop)
St Louis	St Louis	Collinsville (Illinois Bell) *Wentzville (GTE)
Topeka	Topeka	Holtton (United)
Wichita	Wichita	No options

*In the same local, EAS or metropolitan serving area calling scope as the Southwestern Bell Telephone Co. tandem.